



General

Guideline Title

Low-dose aspirin use for the prevention of morbidity and mortality from preeclampsia: U.S. Preventive Services Task Force recommendation statement.

Bibliographic Source(s)

U.S. Preventive Services Task Force. Low-dose aspirin use for the prevention of morbidity and mortality from preeclampsia: U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med.* 2014 Dec 2;161(11):819-26. [18 references] [PubMed](#)

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: U.S. Preventive Services Task Force. Guide to clinical preventive services. 2nd ed. Baltimore (MD): Williams & Wilkins; 1996. Chapter 70, Aspirin prophylaxis in pregnancy. p. 853-59. [31 references].

This guideline meets NGC's 2013 (revised) inclusion criteria.

Recommendations

Major Recommendations

The U.S. Preventive Services Task Force (USPSTF) grades its recommendations (A, B, C, D, or I) and identifies the levels of certainty regarding net benefit (High, Moderate, and Low). The definitions of these grades can be found at the end of the "Major Recommendations" field.

Summary of Recommendations and Evidence

The USPSTF recommends the use of low-dose aspirin (81 mg/d) as preventive medication after 12 weeks of gestation in women who are at high risk for preeclampsia. (B recommendation)

Clinical Considerations

Patient Population Under Consideration

This recommendation applies to asymptomatic pregnant women who are at increased risk for preeclampsia and who have no prior adverse effects with or contraindications to low-dose aspirin.

Assessment of Risk for Preeclampsia

There are no validated methods of identifying women at high risk for preeclampsia on the basis of biomarkers, clinical diagnostic tests, or medical

history. Most clinicians use medical history to identify women at high risk. Risk factors, based on medical history, may help guide clinicians and their patients in the decision to begin aspirin use.

Although clinical risk assessments were not systematically reviewed for this recommendation, a pragmatic approach is described in the Table in the original guideline document. This approach may help to identify a patient population with an absolute risk for preeclampsia of at least 8%, which is consistent with the lowest preeclampsia incidence observed in control groups in studies reviewed by the USPSTF. Women with 1 or more high-risk factors should receive low-dose aspirin. Women with several moderate-risk factors may also benefit from low-dose aspirin (see the Table in the original guideline document), but the evidence is less certain for this approach. Clinicians should use clinical judgment in assessing the risk for preeclampsia and discuss the benefits and harms of low-dose aspirin use with their patients.

Assessment of Risk for Adverse Effects

Low-dose aspirin use in women at increased risk for preeclampsia has not been shown to increase the occurrence of placental abruption; postpartum hemorrhage; or fetal harms, such as intracranial bleeding and congenital anomalies.

Use of Preventive Medication

The dosage and timing of initiation of low-dose aspirin varied across studies. However, the beneficial effects and small harms of low-dose aspirin were consistent across dosages and timing of initiation. It was not possible to determine from the evidence whether a specific dosage or timing of aspirin use conferred greater benefit over other dosages or intervals.

Dosage

Low-dose aspirin at dosages between 60 and 150 mg/d reduced the occurrence of preeclampsia, preterm birth, and intrauterine growth restriction (IUGR) in women at increased risk for preeclampsia in several randomized trials. The most commonly used dosage was 100 mg/d, but the 2 largest trials contributing to the estimates of benefit used 60 mg/d. Although studies did not evaluate a dosage of 81 mg/d, low-dose aspirin is available in the United States as 81-mg tablets, which is a reasonable dosage for prophylaxis in women at high risk for preeclampsia.

Timing

Use of low-dose aspirin was initiated between 12 and 28 weeks of gestation. Evidence did not suggest additional benefit when use of aspirin was started earlier (12 to 16 weeks) rather than later (≥ 16 weeks) in pregnancy in women at increased risk for preeclampsia.

Definitions:

What the USPSTF Grades Mean and Suggestions for Practice

Grade	Grade Definitions	Suggestions for Practice
A	The USPSTF recommends the service. There is high certainty that the net benefit is substantial.	Offer/provide this service.
B	The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.	Offer/provide this service.
C	The USPSTF recommends selectively offering or providing this service to individual patients based on professional judgment and patient preferences. There is at least moderate certainty that the net benefit is small.	Offer/provide this service for selected patients depending on individual circumstances.
D	The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.	Discourage the use of this service.
I Statement	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.	Read the "Clinical Considerations" section of USPSTF Recommendation Statement (see the "Major Recommendations" field). If this service is offered, patients should understand the uncertainty about the balance of benefits and harms.

Definition: The USPSTF defines certainty as "likelihood that the USPSTF assessment of the net benefit of a preventive service is correct." The net benefit is defined as benefit minus harm of the preventive service as implemented in a general, primary care population. The USPSTF assigns a certainty level based on the nature of the overall evidence available to assess the net benefit of a preventive service.

Level of Certainty	Description
High	The available evidence usually includes consistent results from well-designed, well-conducted studies in representative primary care populations. These studies assess the effects of the preventive service on health outcomes. This conclusion is therefore unlikely to be strongly affected by the results of future studies.
Moderate	<p>The available evidence is sufficient to determine the effects of the preventive service on health outcomes, but confidence in the estimate is constrained by factors such as:</p> <ul style="list-style-type: none"> • The number, size, or quality of individual studies • Inconsistency of findings across individual studies • Limited generalizability of findings to routine primary care practice • Lack of coherence in the chain of evidence <p>As more information becomes available, the magnitude or direction of the observed effect could change, and this change may be large enough to alter the conclusion.</p>
Low	<p>The available evidence is insufficient to assess effects on health outcomes. Evidence is insufficient because of:</p> <ul style="list-style-type: none"> • The limited number or size of studies • Important flaws in study design or methods • Inconsistency of findings across individual studies • Gaps in the chain of evidence • Findings not generalizable to routine primary care practice • A lack of information on important health outcomes <p>More information may allow an estimation of effects on health outcomes.</p>

Clinical Algorithm(s)

None available

Scope

Disease/Condition(s)

- Preeclampsia
- Preterm birth
- Intrauterine growth restriction (IUGR)

Guideline Category

Prevention

Clinical Specialty

Family Practice

Internal Medicine

Obstetrics and Gynecology

Intended Users

Advanced Practice Nurses

Allied Health Personnel

Nurses

Physician Assistants

Physicians

Public Health Departments

Guideline Objective(s)

To summarize the current U.S. Preventive Services Task Force (USPSTF) recommendations and supporting evidence on low-dose aspirin use for the prevention of morbidity and mortality from preeclampsia

Target Population

Asymptomatic pregnant women who are at increased risk for preeclampsia and who have no prior adverse effects with or contraindications to low-dose aspirin

Interventions and Practices Considered

Low-dose aspirin

Major Outcomes Considered

- Key Question 1: Is there evidence that aspirin reduces adverse maternal or perinatal health outcomes in women at increased risk for preeclampsia?
- Key Question 2: Is there evidence that aspirin prevents preeclampsia in women at increased risk for preeclampsia?
- Key Question 3: What are the harms of aspirin use during pregnancy?

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Note from the National Guideline Clearinghouse (NGC): A systematic evidence review was prepared by the Kaiser Permanente Research Affiliates Evidence-based Practice Center (EPC) for the U.S. Preventive Services Task Force (USPSTF) (see the "Availability of Companion Documents" field).

Data Sources and Searches

In addition to considering all studies from the previous USPSTF review, EPC staff performed a comprehensive search of MEDLINE, PubMed, the Database of Abstracts of Reviews of Effects, and the Cochrane Central Register of Controlled Trials for studies published between January

2006 and 1 June 2013. They also examined the reference lists from existing systematic reviews to identify potentially eligible studies, including an individual-patient data (IPD) meta-analysis published by the Perinatal Antiplatelet Review of International Studies (PARIS) Collaboration and a 2007 Cochrane review. EPC staff searched ClinicalTrials.gov for ongoing trials (May 2013). Between the last search date and this publication, they actively monitored published literature for potentially important new trials or other large observational studies directly relevant to the key questions; none were identified.

Study Selection

Two investigators independently reviewed abstracts and full-text articles for inclusion according to predetermined criteria. They resolved discrepancies through consensus with a third investigator. To evaluate benefits of aspirin prophylaxis, they included any study that used a risk selection approach aimed at achieving a sample of women at high risk for preeclampsia. The trials could define risk on the basis of medical history, pregnancy characteristics, or clinical measurements known to be associated with risk for the condition. Although preeclampsia occurs more often in first births than in subsequent ones, prevalence rates are relatively low (approximately 4%) compared with other high-risk groups. Because aspirin treatment based only on this risk factor has not been supported, trials with nulliparity as the sole risk factor were not included for evaluation of benefits.

The investigators used broader inclusion criteria to identify possible harms of aspirin exposure during pregnancy. The trials of women at high risk were combined with trials of women at low or average risk exposed to daily low-dose aspirin. Large prospective observational studies were also included to assess harms but were not included in pooled analyses.

The investigators included interventions that compared patients receiving 50 to 150 mg of aspirin with a placebo or "no treatment" group and excluded studies of nonaspirin antiplatelet medications or aspirin combined with another active substance. They also excluded studies that they rated as poor-quality on the basis of the USPSTF quality rating standards and studies not published in English.

Number of Source Documents

- Key Question 1: 18 articles (15 studies)
- Key Question 2: 17 articles (13 studies)
- Key Question 3: 25 articles (21 studies)

Methods Used to Assess the Quality and Strength of the Evidence

Expert Consensus

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

The reviewers assigned each study a final quality rating of good, fair, or poor. See the "Description of the Methods Used to Analyze the Evidence" field for further information.

Methods Used to Analyze the Evidence

Meta-Analysis of Randomized Controlled Trials

Review of Published Meta-Analyses

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

Note from the National Guideline Clearinghouse (NGC): A systematic evidence review was prepared by the Kaiser Permanente Research Affiliates Evidence-based Practice Center (EPC) for the U.S. Preventive Services Task Force (USPSTF) (see the "Availability of Companion Documents" field).

Two investigators critically appraised all included studies independently using the USPSTF's design-specific criteria, which was supplemented with the National Institute for Health and Care Excellence methodology checklists and the Newcastle-Ottawa Scale. According to the USPSTF criteria, a good-quality study met all prespecified standards. A fair-quality study did not meet (or it was unclear whether it met) at least 1 criterion, but it also had no known limitation that could invalidate its results. A poor-quality study had a single fatal flaw or multiple important limitations that could seriously bias its results. Discrepancies were resolved through discussion of identified limitations and consultation with a third investigator, if necessary. One investigator extracted study details and results, and a second investigator reviewed the abstracted information.

Data Synthesis and Analysis

The investigators used the metan procedure in Stata, version 11.2 (StataCorp, College Station, Texas), for all reported meta-analyses and the metaan procedure for sensitivity analyses. For dichotomous outcomes, they entered the number of events and nonevents and estimated pooled random effects risk ratios by using the DerSimonian–Laird method for all outcomes, except those in which fewer than 10% of the participants had the event, for which they used a fixed-effects Mantel–Haenszel model. The investigators also included prediction intervals in forest plots of random-effects models, which provided an estimate of where the effect size from 95% of newly conducted trials would fall, assuming that the between-study variability in the included trials held for new trials. The prediction intervals are shown on the forest plots by the horizontal lines that extend from the diamond representing the 95% confidence interval (CI) of the pooled estimate.

Potential sources of heterogeneity in effect size by aspirin timing, dosage, and preeclampsia risk determination were identified a priori and explored using meta regression and visual inspection of sorted forest plots. The investigators used the I^2 and chi-square statistics to assess statistical heterogeneity. To evaluate small-study effects, they examined funnel plots and used the Begg or Peter test depending on the outcome distribution. The investigators used profile likelihood estimation to conduct sensitivity analyses for the pooled effects because the DerSimonian–Laird method can overestimate CI precision in meta-analysis, particularly when fewer than 10 studies or when smaller studies with few events are pooled.

Methods Used to Formulate the Recommendations

Balance Sheets

Expert Consensus

Description of Methods Used to Formulate the Recommendations

The U.S. Preventive Services Task Force (USPSTF) systematically reviews the evidence concerning both the benefits and harms of widespread implementation of a preventive service. It then assesses the certainty of the evidence and the magnitude of the benefits and harms. On the basis of this assessment, the USPSTF assigns a letter grade to each preventive service signifying its recommendation about provision of the service (see Table below). An important, but often challenging, step is determining the balance between benefits and harms to estimate "net benefit" (that is, benefits minus harms).

Table 1. U.S. Preventive Services Task Force Recommendation Grid*

Certainty of Net Benefit	Magnitude of Net Benefit			
	Substantial	Moderate	Small	Zero/Negative
High	A	B	C	D
Moderate	B	B	C	D
Low	Insufficient			

*A, B, C, D, and I (*Insufficient*) represent the letter grades of recommendation or statement of insufficient evidence assigned by the USPSTF after assessing certainty and magnitude of net benefit of the service (see the "Rating Scheme for the Strength of the Recommendations" field).

The overarching question that the USPSTF seeks to answer for every preventive service is whether evidence suggests that provision of the service would improve health outcomes if implemented in a general primary care population. For screening topics, this standard could be met by a large randomized, controlled trial (RCT) in a representative asymptomatic population with follow-up of all members of both the group "invited for

screening" and the group "not invited for screening."

Direct RCT evidence about screening is often unavailable, so the USPSTF considers indirect evidence. To guide its selection of indirect evidence, the USPSTF constructs a "chain of evidence" within an analytic framework. For each key question, the body of pertinent literature is critically appraised, focusing on the following 6 questions:

- 1. Do the studies have the appropriate research design to answer the key question(s)?
- 2. To what extent are the existing studies of high quality? (i.e., what is the internal validity?)
- 3. To what extent are the results of the studies generalizable to the general U.S. primary care population and situation? (i.e., what is the external validity?)
- 4. How many studies have been conducted that address the key question(s)? How large are the studies? (i.e., what is the precision of the evidence?)
- 5. How consistent are the results of the studies?
- 6. Are there additional factors that assist the USPSTF in drawing conclusions (e.g., presence or absence of dose-response effects, fit within a biologic model)?

The next step in the USPSTF process is to use the evidence from the key questions to assess whether there would be net benefit if the service were implemented. In 2001, the USPSTF published an article that documented its systematic processes of evidence evaluation and recommendation development. At that time, the USPSTF's overall assessment of evidence was described as good, fair, or poor. The USPSTF realized that this rating seemed to apply only to how well studies were conducted and did not fully capture all of the issues that go into an overall assessment of the evidence about net benefit. To avoid confusion, the USPSTF has changed its terminology. Whereas individual study quality will continue to be characterized as good, fair, or poor, the term certainty will now be used to describe the USPSTF's assessment of the overall body of evidence about net benefit of a preventive service and the likelihood that the assessment is correct. Certainty will be determined by considering all 6 questions listed above; the judgment about certainty will be described as high, moderate, or low.

In making its assessment of certainty about net benefit, the evaluation of the evidence from each key question plays a primary role. It is important to note that the USPSTF makes recommendations for real-world medical practice in the United States and must determine to what extent the evidence for each key question—even evidence from screening RCTs or treatment RCTs—can be applied to the general primary care population. Frequently, studies are conducted in highly selected populations under special conditions. The USPSTF must consider differences between the general primary care population and the populations studied in RCTs and make judgments about the likelihood of observing the same effect in actual practice.

It is also important to note that one of the key questions in the analytic framework refers to the potential harms of the preventive service. The USPSTF considers the evidence about the benefits and harms of preventive services separately and equally. Data about harms are often obtained from observational studies because harms observed in RCTs may not be representative of those found in usual practice and because some harms are not completely measured and reported in RCTs.

Putting the body of evidence for all key questions together as a chain, the USPSTF assesses the certainty of net benefit of a preventive service by asking the 6 major questions listed above. The USPSTF would rate a body of convincing evidence about the benefits of a service that, for example, derives from several RCTs of screening in which the estimate of benefits can be generalized to the general primary care population as "high" certainty (see the "Rating Scheme for the Strength of the Recommendations" field). The USPSTF would rate a body of evidence that was not clearly applicable to general practice or has other defects in quality, research design, or consistency of studies as "moderate" certainty. Certainty is "low" when, for example, there are gaps in the evidence linking parts of the analytic framework, when evidence to determine the harms of treatment is unavailable, or when evidence about the benefits of treatment is insufficient. Table 4 in the methodology document listed below (see "Availability of Companion Documents" field) summarizes the current terminology used by the USPSTF to describe the critical assessment of evidence at all 3 levels: individual studies, key questions, and overall certainty of net benefit of the preventive service.

Sawaya GF, Guirguis-Blake J, LeFevre M, Harris R, Petitti D; U.S. Preventive Services Task Force. Update on the methods of the U.S. Preventive Services Task Force: estimating certainty and magnitude of net benefit. *Ann Intern Med*. 2007;147(12):871-875. [5 references].

Rating Scheme for the Strength of the Recommendations

What the U.S. Preventive Services Task Force (USPSTF) Grades Mean and Suggestions for Practice

Grade	Grade Definitions	Suggestions for Practice

Grade	Grade Definitions	Suggestions for Practice
	The USPSTF recommends the service. There is high certainty that the net benefit is substantial.	Offer/provide this service.
B	The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.	Offer/provide this service.
C	The USPSTF recommends selectively offering or providing this service to individual patients based on professional judgment and patient preferences. There is at least moderate certainty that the net benefit is small.	Offer/provide this service for selected patients depending on individual circumstances.
D	The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.	Discourage the use of this service.
I Statement	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.	Read the "Clinical Considerations" section of USPSTF Recommendation Statement (see the "Major Recommendations" field). If this service is offered, patients should understand the uncertainty about the balance of benefits and harms.

USPSTF Levels of Certainty Regarding Net Benefit

Definition: The USPSTF defines certainty as "likelihood that the USPSTF assessment of the net benefit of a preventive service is correct." The net benefit is defined as benefit minus harm of the preventive service as implemented in a general, primary care population. The USPSTF assigns a certainty level based on the nature of the overall evidence available to assess the net benefit of a preventive service.

Level of Certainty	Description
High	The available evidence usually includes consistent results from well-designed, well-conducted studies in representative primary care populations. These studies assess the effects of the preventive service on health outcomes. This conclusion is therefore unlikely to be strongly affected by the results of future studies.
Moderate	<p>The available evidence is sufficient to determine the effects of the preventive service on health outcomes, but confidence in the estimate is constrained by factors such as:</p> <ul style="list-style-type: none"> • The number, size, or quality of individual studies • Inconsistency of findings across individual studies • Limited generalizability of findings to routine primary care practice • Lack of coherence in the chain of evidence <p>As more information becomes available, the magnitude or direction of the observed effect could change, and this change may be large enough to alter the conclusion.</p>
Low	<p>The available evidence is insufficient to assess effects on health outcomes. Evidence is insufficient because of:</p> <ul style="list-style-type: none"> • The limited number or size of studies • Important flaws in study design or methods • Inconsistency of findings across individual studies • Gaps in the chain of evidence • Findings not generalizable to routine primary care practice • A lack of information on important health outcomes <p>More information may allow an estimation of effects on health outcomes.</p>

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

Comparison with Guidelines from Other Groups

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

Peer Review. Before the U.S. Preventive Services Task Force (USPSTF) makes its final determinations about recommendations on a given preventive service, the Evidence-based Practice Center and the Agency for Healthcare Research and Quality send a draft evidence review to 4 to 6 external experts and to Federal agencies and professional and disease-based health organizations with interests in the topic. The experts are asked to examine the review critically for accuracy and completeness and to respond to a series of specific questions about the document. The draft evidence review is also posted for public comment on the USPSTF Web site. After assembling these external review comments and documenting the proposed response to key comments, the topic team presents this information to the USPSTF in memo form. In this way, the USPSTF can consider these external comments before it votes on its recommendations about the service. Draft recommendation statements are then circulated for comment among reviewers representing professional societies, voluntary organizations, and Federal agencies, as well as posted on the USPSTF Web site for public comment. These comments are discussed before the final recommendations are confirmed.

Response to Public Comment. A draft version of this recommendation statement was posted for public comment on the USPSTF Web site from 8 April to 5 May 2014. Some comments requested clarification about risk factors for preeclampsia and the dosage and timing of initiation of low-dose aspirin. In response to these comments, the USPSTF added language about populations that are at risk for preeclampsia and aspirin dosages in the Clinical Considerations section. The USPSTF also added language to the Table in the original guideline document to clarify the populations at risk. The USPSTF added language on the timing of initiation of low-dose aspirin in the Research Needs and Gaps section. Finally, the USPSTF provided more details about study characteristics and results in the Discussion section.

Comparison with Guidelines from Other Groups. Recommendations for screening from the following groups were discussed: the American Congress of Obstetricians and Gynecologists, the World Health Organization, the National Institute for Health and Care Excellence, the American Heart Association, the American Stroke Association, and the American Academy of Family Physicians.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of evidence supporting the recommendations is not specifically stated.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Benefits of Preventive Medication

The U.S. Preventive Services Task Force (USPSTF) found adequate evidence of a reduction in risk for preeclampsia, preterm birth, and intrauterine growth restriction (IUGR) in women at increased risk for preeclampsia who received low-dose aspirin, thus demonstrating substantial benefit.

Low-dose aspirin (range, 60 to 150 mg/d) reduced the risk for preeclampsia by 24% in clinical trials and reduced the risk for preterm birth by 14% and IUGR by 20%.

Potential Harms

Harms of Preventive Medication

The U.S. Preventive Services Task Force (USPSTF) found adequate evidence that low-dose aspirin as preventive medication does not increase

the risk for placental abruption, postpartum hemorrhage, or fetal intracranial bleeding. In a meta-analysis of randomized, controlled trials (RCTs) and observational studies of women at low/average or increased risk for preeclampsia, there was no significantly increased risk for these adverse events. In addition, there was no difference in the risk for placental abruption by aspirin dosage.

The USPSTF also found adequate evidence that low-dose aspirin as preventive medication in women at increased risk for preeclampsia does not increase the risk for perinatal mortality.

Evidence on long-term outcomes in offspring exposed in utero to low-dose aspirin is limited, but no developmental harms were identified by 18 months of age in the one study reviewed.

The USPSTF concludes that the harms of low-dose aspirin in pregnancy are no greater than small.

Qualifying Statements

Qualifying Statements

- Recommendations made by the U.S. Preventive Services Task Force (USPSTF) are independent of the U.S. government. They should not be construed as an official position of the Agency for Healthcare Research and Quality or the U.S. Department of Health and Human Services.
- The USPSTF makes recommendations about the effectiveness of specific clinical preventive services for patients without related signs or symptoms.
- It bases its recommendations on the evidence of both the benefits and harms of the service and an assessment of the balance. The USPSTF does not consider the costs of providing a service in this assessment.
- The USPSTF recognizes that clinical decisions involve more considerations than evidence alone. Clinicians should understand the evidence but individualize decision making to the specific patient or situation. Similarly, the USPSTF notes that policy and coverage decisions involve considerations in addition to the evidence of clinical benefits and harms.

Implementation of the Guideline

Description of Implementation Strategy

The experiences of the first and second U.S. Preventive Services Task Force (USPSTF), as well as that of other evidence-based guideline efforts, have highlighted the importance of identifying effective ways to implement clinical recommendations. Practice guidelines are relatively weak tools for changing clinical practice when used in isolation. To effect change, guidelines must be coupled with strategies to improve their acceptance and feasibility. Such strategies include enlisting the support of local opinion leaders, using reminder systems for clinicians and patients, adopting standing orders, and audit and feedback of information to clinicians about their compliance with recommended practice.

In the case of preventive services guidelines, implementation needs to go beyond traditional dissemination and promotion efforts to recognize the added patient and clinician barriers that affect preventive care. These include clinicians' ambivalence about whether preventive medicine is part of their job, the psychological and practical challenges that patients face in changing behaviors, lack of access to health care or of insurance coverage for preventive services for some patients, competing pressures within the context of shorter office visits, and the lack of organized systems in most practices to ensure the delivery of recommended preventive care.

Dissemination strategies have changed dramatically in this age of electronic information. While recognizing the continuing value of journals and other print formats for dissemination, the USPSTF will make all its products available through its [Web site](#). The combination of electronic access and extensive material in the public domain should make it easier for a broad audience of users to access USPSTF materials and adapt them for their local needs. Online access to USPSTF products also opens up new possibilities for the appearance of the annual, pocket-size Guide to Clinical Preventive Services.

To be successful, approaches for implementing prevention have to be tailored to the local level and deal with the specific barriers at a given site, typically requiring the redesign of systems of care. Such a systems approach to prevention has had notable success in established staff-model health maintenance organizations, by addressing organization of care, emphasizing a philosophy of prevention, and altering the training and incentives for clinicians. Staff-model plans also benefit from integrated information systems that can track the use of needed services and generate

automatic reminders aimed at patients and clinicians, some of the most consistently successful interventions. Information systems remain a major challenge for individual clinicians' offices, however, as well as for looser affiliations of practices in network-model managed care and independent practice associations, where data on patient visits, referrals, and test results are not always centralized.

Implementation Tools

Mobile Device Resources

Patient Resources

Pocket Guide/Reference Cards

Staff Training/Competency Material

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Staying Healthy

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

U.S. Preventive Services Task Force. Low-dose aspirin use for the prevention of morbidity and mortality from preeclampsia: U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med.* 2014 Dec 2;161(11):819-26. [18 references] [PubMed](#)

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

1996 (revised 2014 Dec 2)

Guideline Developer(s)

U.S. Preventive Services Task Force - Independent Expert Panel

Guideline Developer Comment

The U.S. Preventive Services Task Force (USPSTF) is a federally-appointed panel of independent experts. Conclusions of the USPSTF do not necessarily reflect policy of the U.S. Department of Health and Human Services or its agencies.

Source(s) of Funding

The U.S. Preventive Services Task Force (USPSTF) is an independent, voluntary body. The U.S. Congress mandates that the Agency for Healthcare Research and Quality support the operations of the USPSTF.

Guideline Committee

U.S. Preventive Services Task Force

Composition of Group That Authored the Guideline

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**Members of the USPSTF at the time this recommendation was finalized. For a list of current Task Force members, go to www.uspreventiveservicestaskforce.org/Page/Name/our-members .*

Financial Disclosures/Conflicts of Interest

The U.S. Preventive Services Task Force (USPSTF) has an explicit policy concerning conflict of interest. All members disclose at each meeting if they have a significant financial, professional/business, or intellectual conflict for each topic being discussed. USPSTF members with conflicts may be recused from discussing or voting on recommendations about the topic in question.

Disclosures: Dr. Owens reports support from the Agency for Healthcare Research and Quality during the conduct of the study. Authors not named here have disclosed no conflicts of interest. Authors followed the policy regarding conflicts of interest described at www.uspreventiveservicestaskforce.org/Page/Name/methods-and-processes . Disclosures can also be viewed at <https://www.acponline.org/authors/icmje/ConflictOfInterestForms.do?msNum=M14-1884> .

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: U.S. Preventive Services Task Force. Guide to clinical preventive services. 2nd ed. Baltimore (MD): Williams & Wilkins; 1996. Chapter 70, Aspirin prophylaxis in pregnancy. p. 853-59. [31 references].

This guideline meets NGC's 2013 (revised) inclusion criteria.

Guideline Availability

Electronic copies: Available from the [Annals of Internal Medicine Web site](#) .

Availability of Companion Documents

The following are available:

Evidence Reviews:

- Henderson JT, Whitlock EP, O'Connor E, Senger CA, Thompson JH, Rowland MG. Low-dose aspirin for the prevention of morbidity and mortality from preeclampsia: a systematic evidence review for the U.S. Preventive Services Task Force. *Ann Intern Med*. 2014;160(10):695-703.
- Henderson JT, Whitlock EP, O'Connor E, Senger CA, Thompson JH, Rowland MG. Low-dose aspirin for the prevention of morbidity and mortality from preeclampsia: a systematic evidence review for the U.S. Preventive Services Task Force. Evidence Synthesis No. 112. AHRQ Publication No. 14-05207-EF-1. Rockville (MD): Agency for Healthcare Research and Quality; 2014. 123 p.

Electronic copies: Available from the [U.S. Preventive Services Task Force \(USPSTF\) Web site](#) .

Background Articles:

- Barton MB et al. How to read the new recommendation statement: methods update from the U.S. Preventive Services Task Force. *Ann Intern Med* 2007;147:123-127.
- Guirgis-Blake J et al. Current processes of the U.S. Preventive Services Task Force: refining evidence-based recommendation development. *Ann Intern Med* 2007;147:117-122.
- Sawaya GF et al. Update on the methods of the U.S. Preventive Services Task Force: estimating certainty and magnitude of net benefit. *Ann Intern Med* 2007;147:871-875.

Electronic copies: Available from the [USPSTF Web site](#) .

The following are also available:

- Low-dose aspirin for the prevention of morbidity and mortality from preeclampsia. Clinical summary of U.S. Preventive Services Task Force recommendation. 2014. 1 p. Electronic copies: Available from the [USPSTF Web site](#) .
- The guide to clinical preventive services, 2014. Recommendations of the U.S. Preventive Services Task Force. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ), 2014. 144 p. Electronic copies available from the [AHRQ Web site](#) . See the related QualityTool summary on the [Health Care Innovations Exchange Web site](#) .
- A continuing medical education (CME) activity is available from the [Annals of Internal Medicine Web site](#) .

The [Electronic Preventive Services Selector \(ePSS\)](#) is an application designed to provide primary care clinicians and health care teams timely decision support regarding appropriate screening, counseling, and preventive services for their patients. It is based on the current, evidence-based recommendations of the USPSTF and can be searched by specific patient characteristics, such as age, sex, and selected behavioral risk factors.

Patient Resources

The following are available:

- Low-dose aspirin for preeclampsia. Understanding Task Force recommendations. Consumer fact sheet. Rockville (MD): U.S. Preventive Services Task Force. 2014 Sep. 4 p. Electronic copies: Available from the [U.S. Preventive Services Task Force \(USPSTF\) Web site](#) .
- Aspirin to prevent preeclampsia-related complications and death: U.S. Preventive Services Task Force recommendation statement. Summaries for patients. *Ann Intern Med*. 2014;161(11):I-28. Electronic copies: Available from the [Annals of Internal Medicine Web site](#) .

Myhealthfinder is a tool that provides personalized recommendations for clinical preventive services specific to the user's age, gender, and

pregnancy status. It features evidence-based recommendations from the USPSTF and is available at www.healthfinder.gov

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC Status

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